AGGREGATE IMPACT VALUE
(IS: 2386 Part - 4)

TEJUS CONSULTANTS

oject	Improvement to Drains and Asphalting to Roads at Anam Enclave Main Road in Ward No.06(Thanisandra), Byatarayanapura Sub Division		
ent	BRUHAT BANGALORE MAHANAGARA PALIKE		
nsultant	M/s Tejus Consultants		
ntractor	Benaka Developers & Project Pvt.Ltd.		
posed	BC	Date of Sampling	08.04.19
mple cation	At plant	Date of Testing	08.04.19

No.	Description		Test No. 1	Test No. 2	Test No. 3	Spec Limit (%)
	Wt. of stone pieces (dry) passing IS Sieve 12.5mm but retained in IS sieve 10mm (gm)	(Wa)	395.00	367.00	388.00	
	Wt. of the fraction retained in IS sieve 2.36mm after the impact test (gm)	(Wb)	307.00	298.00	299.00	
	Wt. of the fraction passed in IS sieve 2.36mm after the impact test (gm)	(Wc)	88.00	69.00	89.00	
	Aggregate Impact Value (%)	(Wc/Wa)*100	22.28	18.80	22.94	
	Average Aggregate impact value	(%)	21.34			Max - 30 %

arks : Satisfactory / Not Satisfactory

e report shall not be reproduced, except in full, without the written approval of the laboratory.
e results indicated above are based on the tests carried out on the samples
ed in the laboratory/Site.
Query regarding the report must be reported reported within 15days from the date of testing.

ಸಹಾಯಕ ಅಭಿಯಂತರರು
ಬಿ.ಬಿ.ಎಂ.ಪಿ ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ

ಸಹಾಯಕ ಕಾರ್ಯ ಪಾಲಕ ಅಭಿಯಂತರರ
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ., ಬೆಂಗಳೂರು-24

TEJUS CONSULTANTS
Authorised Signatory

Scanned by CamScanner

TEJUS
CONSULTANTS

FLAKINESS AND ELONGATION INDICES (IS 2386, PART 1)

Project :	Improvement to Drains and Asphalting to Roads at Anam Enclave Main Road in Ward No.06(Thanisandra), Byatarayanapura Sub Division
Client :	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant :	M/s Tejus Consultants
Contractor:	Benaka Developers and Project Pvt. Ltd.

Type of Material	BC	Proposed Use	BC
Sample Location	At plant	Date of Sampling	08.04.19
		Date of Testing	08.04.19

Size of aggregate		Flakiness Index		Elongation Index	
Passing through IS sieve, mm	Retained on IS sieve, mm	Total wt. of aggregate retained on sieves (A) gms.	Wt. of aggregate passing from Flakiness gauge (B) gms	Wt. of aggregate retained on Flakiness gauge (C) gms	Wt. of aggregate retained on Elongation gauge after retained on Flakiness gauge(D)gms
63.0	50.0	0	0	0	0
50.0	40.0	0	0	0	0
40.0	31.5	0	0	0	0
31.5	25.0	0	0	0	0
25.0	20.0	0	0	0	0
20.0	16.0	627	74	553	62
16.0	12.5	1206	113	1093	82
12.5	10.0	553	73	480	57
10.0	6.3	500	56	444	45
Total		2886	316	2570	246

Note: Minimum 200 Pcs should be taken on each fraction of test

Flakiness Index(%):	10.95
Elongation Index(%):	9.57
Combined FI+EL (%)	20.52

Note:
1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory/Site.
3. Any Query regarding the report must be reported reported within 15days from the date of testing.

TEJUS CONSULTANTS

Authorised Signatory

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರ
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ.. ಬೆಂಗಳೂರು-24

TEJUS CONSULTANTS
No. 58, 3rd main, 6th Cross, 1st Stage KHB Colony, Basaveshwaranagar, Bangalore - 560079, O : +91 80 23287532, tejusconsultants@gmail.com

Scanned by CamScanner

GRADATION FOR BC
(As per MORT&H 500-18,Grading-2)

TEJUS CONSULTANTS

Name of Work	:	Improvement to Drains and Asphalting to Roads at Anam Enclave Main Road in Ward No.06(Thanisandra), Byatarayanapura Sub Division
Client	:	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	:	M/s Tejus Consultants
Contractor	:	Benaka Developers and Project Pvt. Ltd.
Date of Testing	:	08.04.19
Type of Mix	:	BC
Sample I/D	:	BC3

Sample Location:	At plant	Date of Sampling:	08.04.19	
Type of material & Purpose:	BC	Date of testing:	08.04.19	
		Oven Dry Wt.(gms):	1200.0	

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
19.00	0	0	0.00	100.00	100.00
13.20	135	135.0	11.25	88.75	79 - 100
9.50	108	243.0	20.25	79.75	71 - 95
4.75	222	465.0	38.75	61.25	53 - 71
2.360	125	590.0	49.17	50.83	42 - 58
1.180	121	711.0	59.25	40.75	34 - 48
0.600	103	814.0	67.83	32.17	26 - 38
0.300	111	925.0	77.08	22.92	18 - 28
0.150	85	1010.0	84.17	15.83	12 - 20
0.075	94	1104.0	92.00	8.00	4 - 10
Pan	96.0				
Total	1200.0				

Note:
1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory/Site.
3. Any Query regarding the report must be reported reported within 15days from the date of testing.

ಸಹಾಯಕ ಆಧಿಯಂತರರು
ಬಿ.ಬಿ.ಎಂ.ಪಿ ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ

ಸಹಾಯಕ ಕಾರ್ಯ ನಿರ್ವಾಹಕ ಅಭಿಯಂತರರ
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ., ಬೆಂಗಳೂರು-24

TEJUS CONSULTANTS
Authorised Signatory

Scanned by CamScanner

BITUMEN CONTENT AND GRADATION DETERMINATION OF BITUMINOUS CONCRETE MIX

me of Work :	Improvement to Drains and Asphalting to Roads at Anam Enclave Main Road in Ward No.06(Thanisandra), Byatarayanapura Sub Division
ent :	BRUHAT BANGALORE MAHANAGARA PALIKE
nsultant :	M/s Tejus Consultants
ntractor :	Benaka Developers and Project Pvt. Ltd.
e of Testing :	09.04.19
e of Mix :	BC
mple I/D :	BC1

TEJUS CONSULTANTS

DETERMINATION OF BITUMEN CONTENT

Description	Trail 1	Trail 2
eight of Mixture before extraction, g	953	926
eight of Mixture after extraction, g	900	887
eight of Bitumen	53	39
eight of filter paper before extraction, g	2.00	2.00
eight of filter paper after extraction, g	4.10	4.00
eight of fines, g	1.40	1.70
eight of Bitumen & fines	54.40	40.70
tumen content in %	5.71	4.40
erage Bitumen content in %	5.05	
inimum Bitumen content in %	5.40	

GRADATION FOR BC AFTER EXTRACTION

(As per MORT&H 500-18,Grading-2)

le Location:	At site	Date of Sampling:	09.04.19
f material & se:	BC	Date of testing:	09.04.19
		Oven Dry Wt.(gms):	900.0

ieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
19.00	0	0	0.00	100.00	100.00
13.20	93	93.0	10.33	89.67	79 - 100
9.50	117	210.0	23.33	76.67	71 - 95
4.75	133	343.0	38.11	61.89	53 - 71
2.360	118	461.0	51.22	48.78	42 - 58
1.180	107	568.0	63.11	36.89	34 - 48
0.600	73	641.0	71.22	28.78	26 - 38
0.300	74	715.0	79.44	20.56	18 - 28
0.150	56	771.0	85.67	14.33	12 - 20
0.075	70	841.0	93.44	6.56	4 - 10
Pan	59.0				
Total	900.0				

eport shall not be reproduced, except in full, without the written approval of the laboratory.
esults indicated above are based on the tests carried out on the samples in the laboratory/Site.
uery regarding the report must be reported reported within 15days from the date of testing.

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ

TEJUS CONSULTANTS

Authorised Signatory

TEJUS CONSULTANTS
No. 3rd main, 6th Cross, 1st Stage KHB Colony, Basaveshwaranagar, Bangalore - 560079. O : +91 80 23287532, tejusconsultants@gmail.com

Scanned by CamScanner

DETERMINATION OF RATE OF SPREAD TACK COAT

TEJUS CONSULTANTS

Name of Work :	Improvement to Drains and Asphalting to Roads at Anam Enclave Main Road in Ward No.06(Thanisandra), Byatarayanapura Sub Division
Client :	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant :	M/s Tejus Consultants
Contractor :	Benaka Developers and Project Pvt. Ltd.
Date of Testing :	09.04.19
Type of Mix :	Tack coat
Sample I/D :	1

Determination	Unit	Test No		
		1	2	3
Size of Plate (mxm)	Mt	0.30 x .30	0.30 x .30	0.30 x .30
Area of Plate (a)	Sq.mtr	0.09	0.09	0.09
Initial Wt of empty Plate (b)	Kg	0.817	0.816	0.819
Final weight of plate after application of tack Coat (c)	Kg	0.840	0.839	0.842
Weight of tack Coat (d=c-b)	Kg	0.023	0.023	0.023
Rate of spread of tack coat	Kg/sq.m	0.250	0.256	0.251
Average	Kg/sq.m	0.252		
Specified Limit	Kg/sq.m	**0.250 Kg/sq.m**		

Note:

1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory/Site.
3. Any Query regarding the report must be reported reported within 15days from the date of testing.

ಸಹಾಯಕ ಅಭಿಯಂತರರು
ಬಿ.ಬಿ.ಎಂ.ಪಿ ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ

ಸಹಾಯಕ ಕಾರ್ಯ ಪಾಲಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ., ಬೆಂಗಳೂರು-24

TEJUS CONSULTANTS

Authorised Signatory

Scanned by CamScanner

BRUHATH BANGALORE MAHANAGARA PALIKE
BYATARAYANAPURA DIVISION

Name of the work: Improvement of Drains and Asphalting to Road at Akashavani Layout in Ward No.06(Thanisandra), Byatarayanapura Sub Division

Scanned by CamScanner

AGGREGATE IMPACT VALUE
(IS: 2386 Part - 4)

TEJUS CONSULTANTS

Project	Improvement of Drains and Asphalting to Road at Akashavani Layout in Ward No.06(Thanisandra), Byatarayanapura Sub Division		
Client	BRUHAT BANGALORE MAHANAGARA PALIKE		
Consultant	M/s Tejus Consultants		
Contractor	Benaka Developers & Project Pvt.Ltd.		
Proposed Use	WMM	**Date of Sampling**	**11.05.19**
Sample Location	At plant	**Date of Testing**	**11.05.19**

Sl. No.	Description		Test No. 1	Test No. 2	Test No. 3	Spec Limit (%)
1	Wt. of stone pieces (dry) passing IS Sieve 12.5mm but retained in IS sieve 10mm (gm)	(Wa)	346.00	349.00	356.00	
2	Wt. of the fraction retained in IS sieve 2.36mm after the impact test (gm)	(Wb)	263.00	271.00	273.00	
3	Wt. of the fraction passed in IS sieve 2.36mm after the impact test (gm)	(Wc)	83.00	78.00	83.00	
4	Aggregate Impact Value (%)	(Wc/Wa)* 100	23.99	22.35	23.31	
5	Average Aggregate impact value	(%)	23.22			Max - 30 %

Remarks : Satisfactory / Not Satisfactory

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಬೆಂಗಳೂರು-26

Authorised Signatory

TEJUS CONSULTANTS
No. 58, 3rd main, 6th Cross, 1st Stage KHB Colony, Basaveshwaranagar, Bangalore - 560079, O : +91 80 23287532, tejusconsultants@gmail.com

Scanned by CamScanner

AGGREGATE IMPACT VALUE
(IS: 2386 Part - 4)

TEJUS CONSULTANTS

Project	Improvement of Drains and Asphalting to Road at Akashavani Layout in Ward No.06(Thanisandra), Byatarayanapura Sub Division		
Client	BRUHAT BANGALORE MAHANAGARA PALIKE		
Consultant	M/s Tejus Consultants		
Contractor	Benaka Developers & Project Pvt.Ltd.		
Proposed Use	WMM	**Date of Sampling**	**11.05.19**
Sample Location	At plant	**Date of Testing**	**11.05.19**

Sl. No.	Description		Test No. 1	Test No. 2	Test No. 3	Spec Limit (%)
1	Wt. of stone pieces (dry) passing IS Sieve 12.5mm but retained in IS sieve 10mm (gm)	(Wa)	359.00	367.00	396.00	
2	Wt. of the fraction retained in IS sieve 2.36mm after the impact test (gm)	(Wb)	280.00	292.00	323.00	
3	Wt. of the fraction passed in IS sieve 2.36mm after the impact test (gm)	(Wc)	79.00	75.00	73.00	
4	Aggregate Impact Value (%)	(Wc/Wa)* 100	22.01	20.44	18.43	
5	Average Aggregate impact value	(%)	20.29			Max - 30 %

Remarks : Satisfactory / Not Satisfactory

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ

TEJUS CONSULTANTS

Authorised Signatory

TEJUS CONSULTANTS
No. 58, 3rd main, 6th Cross, 1st Stage KHB Colony, Basaveshwaranagar, Bangalore - 560079, O : +91 80 23287532, tejusconsultants@gmail.com

Scanned by CamScanner

TEJUS
CONSULTANTS

FLAKINESS AND ELONGATION INDICES (IS 2386, PART 1)

Project	Improvement of Drains and Asphalting to Road at Akashavani Layout in Ward No.06(Thanisandra), Byatarayanapura Sub Division
Client	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	M/s Tejus Consultants
Contractor	Benaka Developers & Project Pvt.Ltd.

Type of Material	WMM	Proposed Use	WMM
Sample Location	At plant	Date of Sampling	11.05.19
		Date of Testing	11.05.19

Size of aggregate		Flakiness Index		Elongation Index	
Passing through IS sieve, mm	Retained on IS sieve, mm	Total wt. of aggregate retained on sieves (A) gms.	Wt. of aggregate passing from Flakiness gauge (B) gms	Wt. of aggregate retained on Flakiness gauge (C) gms	Wt. of aggregate retained on Elongation gauge after retained on Flakiness gauge(D)gms
63.0	50.0	0	0	0	0
50.0	40.0	0	0	0	0
40.0	31.5	0	0	0	0
31.5	25.0	0	0	0	0
25.0	20.0	0	0	0	0
20.0	16.0	856	80	776	63
16.0	12.5	1204	108	1096	98
12.5	10.0	453	72	381	74
10.0	6.3	498	80	418	49
Total		3011	340	2671	284

Note: Minimum 200 Pcs should be taken on each fraction of test

Flakiness Index(%):	11.29
Elongation Index(%):	10.63
Combined FI+EL (%)	21.92

TEJUS CONSULTANTS

Authorised Signatory

Scanned by CamScanner

TEJUS
CONSULTANTS

FLAKINESS AND ELONGATION INDICES (IS 2386, PART 1)

Project	Improvement of Drains and Asphalting to Road at Akashavani Layout in Ward No.06(Thanisandra), Byatarayanapura Sub Division
Client	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	M/s Tejus Consultants
Contractor	Benaka Developers & Project Pvt.Ltd.

Type of Material	WMM	Proposed Use	WMM
Sample Location	At plant	Date of Sampling	11.05.19
		Date of Testing	11.05.19

Size of aggregate		Flakiness Index		Elongation Index	
Passing through IS sieve, mm	Retained on IS sieve, mm	Total wt. of aggregate retained on sieves (A) gms.	Wt. of aggregate passing from Flakiness gauge (B) gms	Wt. of aggregate retained on Flakiness gauge (C) gms	Wt. of aggregate retained on Elongation gauge after retained on Flakiness gauge(D)gms
63.0	50.0	0	0	0	0
50.0	40.0	0	0	0	0
40.0	31.5	0	0	0	0
31.5	25.0	0	0	0	0
25.0	20.0	0	0	0	0
20.0	16.0	849	90	759	64
16.0	12.5	1225	100	1125	96
12.5	10.0	450	72	378	64
10.0	6.3	506	72	434	55
Total		3030	334	2696	279

Note: Minimum 200 Pcs should be taken on each fraction of test

Flakiness Index(%):	11.02
Elongation Index(%):	10.35
Combined FI+EL (%)	21.37

ಸಹಾಯಕ ಅಧಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ

ಸಹಾಯಕ ಕಾರ್ಯ ಪಾಲಕ ಅಧಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ., ಬೆಂಗಳೂರು-24

TEJUS CONSULTANTS
Authorised Signatory

Scanned by CamScanner

TEJUS
CONSULTANTS

GRADATION FOR WMM
(As per MORT&H 400-11)

Name of Work	:	Improvement of Drains and Asphalting to Road at Akashavani Layout in Ward No.06(Thanisandra), Byatarayanapura Sub Division
Client	:	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	:	M/s Tejus Consultants
Contractor	:	Benaka Developers & Project Pvt.Ltd.
Date of Testing	:	11.05.19
Type of Mix	:	WMM
Sample I/D	:	WMM 1

Sample Location:	At plant	Date of Sampling:	11.05.19
Type of material & Purpose:	WMM	Date of testing:	11.05.19
		Oven Dry Wt.(gms):	10000.0

IS Sieve size in mm	Weight retained (gm)	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
53	0	0	0.00	100.00	100.00
45	590	590	5.90	94.10	95-100
22.4	2563	3153	31.53	68.47	60-80
11.2	1825	4978	49.78	50.22	40-60
4.75	1425	6403	64.03	35.97	25-40
2.36	1327	7730	77.30	22.70	15-30
0.6	823	8553	85.53	14.47	8.0-22.0
0.075	782	9335	93.35	6.65	0-8
Pan	665				
Total	10000				

TEJUS CONSULTANTS
Authorised Signatory

TEJUS CONSULTANTS
No. 58, 3rd main, 6th Cross, 1st Stage KHB Colony, Basaveshwaranagar, Bangalore - 560079. O : +91 80 23287532, tejusconsultants@gmail.com

Scanned by CamScanner

TEJUS
CONSULTANTS

GRADATION FOR WMM
(As per MORT&H 400-11)

Name of Work	:	Improvement of Drains and Asphalting to Road at Akashavani Layout in Ward No.06(Thanisandra), Byatarayanapura Sub Division
Client	:	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	:	M/s Tejus Consultants
Contractor	:	Benaka Developers & Project Pvt.Ltd.
Date of Testing	:	11.05.19
Type of Mix	:	WMM
Sample I/D	:	WMM 1

Sample Location:	At plant	Date of Sampling:	11.05.19
Type of material & Purpose:	WMM	Date of testing:	11.05.19
		Oven Dry Wt.(gms):	10000.0

IS Sieve size in mm	Weight retained (gm)	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
53	0	0	0.00	100.00	100.00
45	596	596	5.96	94.04	95-100
22.4	2535	3131	31.31	68.69	60-80
11.2	1816	4947	49.47	50.53	40-60
4.75	1526	6473	64.73	35.27	25-40
2.36	1356	7829	78.29	21.71	15-30
0.6	827	8656	86.56	13.44	8.0-22.0
0.075	815	9471	94.71	5.29	0-8
Pan	529				
Total	10000				

TEJUS CONSULTANTS
Authorised Signatory

TEJUS CONSULTANTS
No. 58, 3rd main, 6th Cross, 1st Stage KHB Colony, Basaveshwaranagar, Bangalore - 560079. O : +91 80 23287532, tejusconsultants@gmail.com

Scanned by CamScanner

TEJUS
CONSULTANTS

Project	Improvement of Drains and Asphalting to Road at Akashavani Layout in Ward No.06(Thanisandra), Byatarayanapura Sub Division
Client	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	M/s Tejus Consultants'
Contractor	Benaka Developers & Project Pvt.Ltd.

Field Dry Density test by Sand Replacement Method (As per IS 2720 (Part 28)

Date of Testing	12.05.19
Layer no. or level	WMM I layer
Depth of hole	250mm

	1	2	3
Field density:			
Wt. of wet material from hole (Ww) gms.	6220	6116	6125
Wt. of sand+cylinder before pouring (w1) gms.	14000	14000	14000
Wt. of sand+cylinder after pouring (w2) gms.	9683	9725	9753
Wt. of sand in cone (w3) gms.	836	845	835
Wt. of sand in hole (w4)=(w1-w2-w3) gms.	3482	3430	3412
Bulk density of sand (γs)gm/cc	1.31	1.32	1.31
Bulk density of material(i.e. wt. of the wet material) (γb)=(Ww/w4*(γs))gm/cc	2.34	2.35	2.35
Moisture meter reading(moisture content)	12.31	12.53	12.50
Result			
DD(Wt.of the dry material)=(100γb/100+mc)gm/cc	2.08	2.09	2.09
MDD	2.12	2.12	2.12
OMC	12.60%	12.60%	12.60%
of Compaction Obtained	98.28	98.66	98.60
ompaction Required	98%	98%	98%

ಸಹಾಯಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರ
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬೆಂಗಳೂರು-24

TEJUS CONSULTANTS

Authorised Signatory

Scanned by CamScanner

TEJUS
CONSULTANTS

Project	Improvement of Drains and Asphalting to Road at Akashavani Layout in Ward No.06(Thanisandra), Byatarayanapura Sub Division
Client	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	M/s Tejus Consultants
Contractor	Benaka Developers & Project Pvt.Ltd.

Field Dry Density test by Sand Replacement Method (As per IS 2720 (Part 28)

Date of Testing	12.05.19
Layer no. or level	WMM I layer
Depth of hole	250mm

Field density:	1	2	3
Wt. of wet material from hole (Ww) gms.	6186	6113	6218
Wt. of sand+cylinder before pouring (w1) gms.	14000	14000	14000
Wt. of sand+cylinder after pouring (w2) gms.	9706	9718	9695
Wt. of sand in cone (w3) gms.	836	843	836
Wt. of sand in hole (w4)=(w1-w2-w3) gms.	3458	3439	3469
Bulk density of sand (γs)gm/cc	1.31	1.32	1.31
Bulk density of material(i.e. wt. of the wet material) (γb)=(Ww/w4*(γs))gm/cc	2.34	2.35	2.35
Moisture meter reading(moisture content)	12.30	12.56	12.58
Result			
FDD(Wt.of the dry material)=(100γb/100+mc)gm/cc	2.09	2.08	2.09
MDD	2.12	2.12	2.12
OMC	12.60%	12.60%	12.60%
% of Compaction Obtained	98.43	98.33	98.38
Compaction Required	98%	98%	98%

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ., ಬೆಂಗಳೂರು-26

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ., ಬೆಂಗಳೂರು-26

TEJUS CONSULTANTS
Authorised Signatory

Scanned by CamScanner

AGGREGATE IMPACT VALUE
(IS: 2386 Part - 4)

TEJUS CONSULTANTS

	Improvement of Drains and Asphalting to Road at Akashavani Layout in Ward No.06(Thanisandra), Byatarayanapura Sub Division
	BRUHAT BANGALORE MAHANAGARA PALIKE
tant	M/s Tejus Consultants
ctor	Benaka Developers & Project Pvt.Ltd.

ied	BC	Date of Sampling	15.05.19
on	At plant	Date of Testing	15.05.19

Description		Test No. 1	Test No. 2	Test No. 3	Spec Limit (%)
Wt. of stone pieces (dry) passing IS Sieve 12.5mm but retained in IS sieve 10mm (gm)	(Wa)	396.00	383.00	373.00	
Wt. of the fraction retained in IS sieve 2.36mm after the impact test (gm)	(Wb)	304.00	295.00	294.00	
Wt. of the fraction passed in IS sieve 2.36mm after the impact test (gm)	(Wc)	92.00	88.00	79.00	
Aggregate Impact Value (%)	(Wc/Wa)*100	23.23	22.98	21.18	
Average Aggregate impact value	(%)	22.46			Max - 30 %

ks : Satisfactory / Not Satisfactory

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ., ಬೆಂಗಳೂರು-24

TEJUS CONSULTANTS
Authorised Signatory

Scanned by CamScanner

TEJUS

FLAKINESS AND ELONGATION INDICES (IS 2386, PART 1)

Project :	Improvement of Drains and Asphalting to Road at Akashavani Layout in Ward No.06(Thanisandra), Byatarayanapura Sub Division
Client :	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant :	M/s Tejus Consultants
Contractor:	Benaka Developers & Project Pvt.Ltd.

Type of Material	BC	Proposed Use	BC
Sample Location	At plant	Date of Sampling	15.05.19
		Date of Testing	15.05.19

Size of aggregate		Flakiness Index		Elongation Index	
Passing through IS sieve, mm	Retained on IS sieve, mm	Total wt. of aggregate retained on sieves (A) gms.	Wt. of aggregate passing from Flakiness gauge (B) gms	Wt. of aggregate retained on Flakiness gauge (C) gms	Wt. of aggregate retained on Elongation gauge after retained on Flakiness gauge(D)gms
63.0	50.0	0	0	0	0
50.0	40.0	0	0	0	0
40.0	31.5	0	0	0	0
31.5	25.0	0	0	0	0
25.0	20.0	0	0	0	0
20.0	16.0	628	75	553	65
16.0	12.5	1218	115	1103	80
12.5	10.0	508	73	435	65
10.0	6.3	496	56	440	50
Total		2850	319	2531	260

Note: Minimum 200 Pcs should be taken on each fraction of test

Flakiness Index(%):	11.19
Elongation Index(%):	10.27
Combined FI+EL (%)	21.47

TEJUS CONSULTANTS
Authorised Signatory

ಸಹಾಯಕ ಆಯುಕ್ತರು
ಬಿ.ಬಿ.ಎಂ.ಪಿ ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ

ಸಹಾಯಕ ಕಾರ್ಯ ಪಾಲಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ., ಬೆಂಗಳೂರು-26

Scanned by CamScanner

TEJUS
CONSULTANTS

GRADATION FOR BC
(As per MORT&H 500-18,Grading-2)

Name of Work	:	**Improvement of Drains and Asphalting to Road at Akashavani Layout in Ward No.06(Thanisandra), Byatarayanapura Sub Division**
Client	:	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	:	M/s Tejus Consultants
Contractor	:	Benaka Developers & Project Pvt.Ltd.
Date of Testing	:	15.05.19
Type of Mix	:	BC
Sample I/D	:	BC3

Sample Location:	At plant	Date of Sampling:	15.05.19
Type of material & Purpose:	BC	Date of testing:	15.05.19
		Oven Dry Wt.(gms):	1200.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
19.00	0	0	0.00	100.00	100.00
13.20	139	139.0	11.58	88.42	79 - 100
9.50	110	249.0	20.75	79.25	71 - 95
4.75	223	472.0	39.33	60.67	53 - 71
2.360	126	598.0	49.83	50.17	42 - 58
1.180	122	720.0	60.00	40.00	34 - 48
0.600	110	830.0	69.17	30.83	26 - 38
0.300	113	943.0	78.58	21.42	18 - 28
0.150	89	1032.0	86.00	14.00	12 - 20
0.075	94	1126.0	93.83	6.17	4 - 10
Pan	74.0				
Total	1200.0				

ಸಹಾಯಕ ಅಭಿಯಂತರರು
ಬಿ.ಬಿ.ಎಂ.ಪಿ ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ, ಬೆಂಗಳೂರು-26

TEJUS CONSULTANTS
Authorised Signatory

TEJUS CONSULTANTS
No. 58, 3rd main, 6th Cross, 1st Stage KHB Colony, Basaveshwaranagar, Bangalore - 560079, O : +91 80 23287532, tejusconsultants@gmail.com

Scanned by CamScanner

TEJUS
CONSULTANTS

BITUMEN CONTENT AND GRADATION DETERMINATION OF BITUMINOUS CONCRETE MIX	
Name of Work :	Improvement of Drains and Asphalting to Road at Akashavani Layout in Ward No.06(Thanisandra), Byatarayanapura Sub Division
Client :	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant :	M/s Tejus Consultants
Contractor :	Benaka Developers & Project Pvt.Ltd.
Date of Testing :	16.05.19
Type of Mix :	BC
Sample I/D :	BC1

DETERMINATION OF BITUMEN CONTENT

Description	Trail 1	Trail 2
1. Weight of Mixture before extraction, g	951	918
2. Weight of Mixture after extraction, g	898	866
3. Weight of Bitumen	53	52
4. Weight of filter paper before extraction, g	2.00	2.00
5. Weight of filter paper after extraction, g	4.10	3.60
6. Weight of fines, g	2.10	1.60
7. Weight of Bitumen & fines	55.10	53.60
8. Bitumen content in %	5.79	5.84
9. Average Bitumen content in %	5.82	
10. Minimum Bitumen content in %	5.80	

GRADATION FOR BC AFTER EXTRACTION
(As per MORT&H 500-18,Grading-2)

Sample Location:	At site	Date of Sampling:	16.05.19
Type of material & Purpose:	BC	Date of testing:	16.05.19
		Oven Dry Wt.(gms):	898.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
19.00	0	0	0.00	100.00	100.00
13.20	95	95.0	10.58	89.42	79 - 100
9.50	119	214.0	23.83	76.17	71 - 95
4.75	136	350.0	38.98	61.02	53 - 71
2.360	125	475.0	52.90	47.10	42 - 58
1.180	107	582.0	64.81	35.19	34 - 48
0.600	75	657.0	73.16	26.84	26 - 38
0.300	80	737.0	82.07	17.93	18 - 28
0.150	59	796.0	88.64	11.36	12 - 20
0.075	74	870.0	96.88	3.12	4 - 10
Pan	28.0				
Total	898.0				

ಸಹಾಯಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ

ಸಹಾಯಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ

TEJUS CONSULTANTS
Authorised Signatory

TEJUS CONSULTANTS
No.1, Main, 6th Cross, 1st Stage KHB Colony, Basaveshwaranagar, Bangalore - 560079. O : +91 80 2328 1532 tejusconsultants@gmail.com

Scanned by CamScanner

TEJUS
CONSULTANTS

DETERMINATION OF RATE OF SPREAD TACK COAT

Name of Work :	Improvement of Drains and Asphalting to Road at Akashavani Layout in Ward No.06(Thanisandra), Byatarayanapura Sub Division
Client :	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant :	M/s Tejus Consultants
Contractor :	Benaka Developers & Project Pvt.Ltd.
Date of Testing :	16.05.19
Type of Mix :	Tack coat
Sample I/D :	1

Determination	Unit	Test No		
		1	2	3
Size of Plate (mxm)	Mt	0.30 x .30	0.30 x .30	0.30 x .30
Area of Plate (a)	Sq.mtr	0.09	0.09	0.09
Initial Wt of empty Plate (b)	Kg	0.789	0.779	0.786
Final weight of plate after application of tack Coat (c)	Kg	0.812	0.802	0.809
Weight of tack Coat (d=c-b)	Kg	0.023	0.023	0.023
Rate of spread of tack coat	Kg/sq.m	0.256	0.256	0.256
Average	Kg/sq.m	0.256		
Specified Limit	Kg/sq.m	**0.250 Kg/sq.m**		

ಸಹಾಯಕ ಅಭಿಯಂತರರು
ಬಿ.ಬಿ.ಎಂ.ಪಿ ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ

ಸಹಾಯಕ ಕಾರ್ಯ ಪಾಲಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ

Authorised Signatory

Scanned by CamScanner

BRUHATH BANGALORE MAHANAGARA PALIKE
BYATARAYANAPURA DIVISION

Name of the work: Improvement of Drains and Asphalting to Road at Amarajoythi Layout Main Road Left and Right Side Cross Roads in Ward No.06(Thanisandra), Byatarayanapura Sub Division

Scanned by CamScanner

TEJUS
CONSULTANTS

TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike
Project	Improvement of Drains and Asphalting to Road at Amarajoythi Layout Main Road Left and Right Side Cross Roads in Ward No.06(Thanisandra), Byatarayanapura Sub Division
Consultants	Tejus Consultants, Bangalore
Contractor	Benaka developers and project pvt ltd

SIEVE ANALYSIS

Total Weight:	3000 gms		
Type of Material	Fine aggregate (River Sand/ M sand)	Proposed Use	PCC
Sample Location	At Site/Plant	Date of Sampling	02.05.19
		Date of Testing	02.05.19

IS Sieve Size	Weight Retained	Cum. Weight Retained	Cum. % Retained	Cum. % Passing	Spec. Limit (%) Passing (Zone-II)
10.00 mm	0	0	0	100.00	100
4.75 mm	206	206	6.87	93.13	90 - 100
2.36 mm	309	515	17.17	82.83	75 - 100
1.18 mm	420	935	31.17	68.83	55 - 90
0.600 mm	481	1416	47.20	52.80	35 -59
0.300 mm	700	2116	70.53	29.47	8-30
0.150 mm	630	2746	91.53	8.47	0 - 10
Pan	254	3000			-

Remarks : ✓ Satisfactory / Not Satisfactory

Note:
1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory/Site.
3. Any Query regarding the report must be reported reported within 15days from the date of testing.

TEJUS CONSULTANTS

Authorised Signatory

ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ

Scanned by CamScanner

TEJUS
CONSULTANTS

TEST REPORT

Clients	Bruhath Bangalore Mahanagara Palike
Project	Improvement of Drains and Asphalting to Road at Amarajoythi Layout Main Road Left and Right Side Cross Roads in Ward No.06(Thanisandra), Byatarayanapura Sub Division
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	Benaka Developers and Project Pvt. Ltd.
Total Weight in gm:	3000

SIEVE ANALYSIS

Type of Material	40 mm down size	Proposed Use	PCC
Sample Location	At Site/Plant	Date of Sampling	02.05.19
		Date of Testing	02.05.19

IS Sieve Size	Weight Retained in gm	Cum. Weight Retained in gm	Cumulative Weight Retained in %	Cumulative Weight Passing in %	Specific Limits as per IS 383-1970 (RA-2007) % of Passing For Graded Aggregate of Nominal Size
80.00mm	0	0	0.00	100.00	100
63.00mm	0	0	0.00	100.00	-
40.00mm	256	256	8.53	91.47	95-100
20.00mm	1256	1512	50.40	49.60	30-70
10.00mm	935	2447	81.57	18.43	10-35
4.75mm	466	2913	97.10	2.90	0-5
Pan	87	3000	100.00	0.00	

Remarks : Satisfactory / Not Satisfactory

Note:

The report shall not be reproduced, except in full, without the written approval of the laboratory.

The results indicated above are based on the tests carried out on the samples received in the laboratory/Site.

Any Query regarding the report must be reported reported within 15days from the date of testing.

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ

TEJUS CONSULTANTS
Authorised Signatory

Scanned by CamScanner

TEJUS
CONSULTANTS

Test Report on Cement

ıct	Improvement of Drains and Asphalting to Road at Amarajoythi Layout Main Road Left and Right Side Cross Roads in Ward No.06(Thanisandra), Byatarayanapura Sub Division
t	Bruhat Bangalore Mahanagar Palike
ultant	TEJUS CONSULTANTS
ractor	Benaka Developers and Project Pvt. Ltd.
ıle ID	Cement
of ıle d	02.05.19
ıle lied By	Agency

l.No.	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 12269-1987
1	a) Initial Setting Time	IS-4031 (Part-5)	34 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part-5)	347 Minutes	Not More than 600 Minutes
2	Soundness	IS-4031 (Part-3) By the Le-Chatelier method	4mm	Not More than 10 mm
3	Standard Consistency	IS-4031 (Part-4)	26.00%	25 % to 35

eport shall not be reproduced, except in full, without the written approval of the laboratory.
esults indicated above are based on the tests carried out on the samples
l in the laboratory /Site.
Query regarding the report must be reported reported within 15days from the date of testing.

TEJUS CONSULTANTS

Authorised Signatory

TEJUS CONSULTANTS
No. 58, 3rd main, 6th Cross, 1st Stage KHB Colony, Basaveshwaranagar, Bangalore - 560079. O: +91 80 23287532, tejusconsultants@gmail.com

Scanned by CamScanner

TEJUS
CONSULTANTS

TEST REPORT

Clients	BRUHAT BENGALORE MAHANAGARA PALIKE
Project	Improvement of Drains and Asphalting to Road at Amarajoythi Layout Main Road Left and Right Side Cross Roads in Ward No.06(Thanisandra), Byatarayanapura Sub Division
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	Benaka developers and project pvt ltd

SPECIFIC GRAVITY AND WATER ABSORPTION

FINE AGGREGATE (IS-2386-PART-3)

Type of Material	Fine aggregate (River Sand/ M sand)	Proposed Use	PCC
Location/Source	At Site/Plant	Date of Sampling	02.05.19
Period of Soaking	24 hours	Date of Testing	02.05.19

Sl. No.	Test Property	TRIAL - 1	TRIAL - 2	TRIAL - 3	
A	Weight of sturated surface dry sample gm.	650	668	662	
B	Weight of oven - dry sample gm.	640	658	652	
C	Weight of Pycnometer Filled with water gm	1275	1275	1275	
D	Weight of Pycnometer + sample + water gm	1685	1698	1693	
E	Bulk specific gravity $\frac{B}{(C+A-D)}$	2.667	2.686	2.672	2.675
G	Absorption (%) $\frac{(A-B)*100}{B}$	1.563	1.520	1.534	1.539

Note:
1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory /Site.
3. Any Query regarding the report must be reported reported within 15days from the date of testing.

ಸಹಾಯಕ ಅಭಿಯಂತರರು
ಬಿ.ಬಿ.ಎಂ.ಪಿ ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ

ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ

TEJUS CONSULTANTS

Authorised Signatory

Scanned by CamScanner

TEJUS
CONSULTANTS

PRECAST SLAB (CORE) TEST REPORT

ient	:	Bruhat Bangalore Mahanagara Palike
ntractor	:	Benaka Developers and Project Pvt. Ltd.
me of Work	:	Improvement of Drains and Asphalting to Road at Amarajoythi Layout Main Road Left and Right Side Cross Roads in Ward No.06(Thanisandra), Byatarayanapura Sub Division
.of Sample Tested	:	3
te of Testing	:	05.05.19
chinical Reference	:	IS:516-1959 (Reaffirmed 1999), SP-24:1983.
ade of Concrete	:	M_{20}. 250mm Thick

No.	Dia of Core D (mm)	Height of Core H (mm)	Core Wt (Kg)	Density of Core (kg / m^3)	H / D	Correction factor (Based on H/D)	Failure Load (kN)	Core Strength (N/mm^2)	Correction Factor for the Dia. (Strength of the Core x 1.08)	Corrected Cylinder Compressive Strength (N/mm^2)	Equivalent Cube Compressive Strength (N/mm^2)
1	250.00	180.00	3.450	390.46	0.72	0.960	159.20	3.24	3.50	3.36	4.20
2	250.00	180.00	3.480	393.86	0.72	0.960	158.60	3.23	3.49	3.35	4.19
3	250.00	180.00	3.470	392.72	0.72	0.960	158.00	3.22	3.48	3.34	4.17

e:
he report shall not be reproduced, except in full, without the written approval of the laboratory.
he results indicated above are based on the tests carried out on the samples received in the laboratory.
ny Query regarding the report must be reported reported within 15 days from the date of testing.

TEJUS CONSULTANTS

Authorised Signatory

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ, ಬೆಂಗಳೂರು-24

Scanned by CamScanner

TEJUS
CONSULTANTS

TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike	
Project	Improvement of Drains and Asphalting to Road at Amarajoythi Layout Main Road Left and Right Side Cross Roads in Ward No.06(Thanisandra), Byatarayanapura Sub Division	
Consultants	TEJUS CONSULTANTS	
Contractor	Benaka Developers and Project Pvt. Ltd.	
Total Weight:	10000	gms

SIEVE ANALYSIS

Type of Material	12.5 mm down size	Proposed Use	Concrete
Sample Location	At Site/Plant	Date of Sampling	05.05.19
		Date of Testing	05.05.19

IS Sieve Size (in mm)	Weight Retained	Cum. Weight Retained	Cum. % Retained	Cum. % Passing	Spec. Limit (%) Passing
20.0	0	0	0	100	100
12.5	549	549	5.49	94.51	90-100
10.0	4687	5236	52.36	47.64	40-85
4.75	4535	9771	97.71	2.29	0-10
Pan	241	10012			

Remarks : Satisfactory / Not Satisfactory

Note:
1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory/Site.
3. Any Query regarding the report must be reported reported within 15days from the date of testing.

ಸಹಾಯಕ ಅಭಿಯಂತರರು
ಬಿ.ಬಿ.ಎಂ.ಪಿ ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ

ಸಹಾಯಕ ಕಾರ್ಯ ಪಾಲಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ

TEJUS CONSULTANTS

Authorised Signatory

TEJUS CONSULTANTS
No. 58, 3rd main, 6th Cross, 1st Stage KHB Colony, Basaveshwaranagar, Bangalore - 560079, O : +91 80 23287532, tejusconsultants@gmail.com

Scanned by CamScanner

TEJUS
CONSULTANTS

TEST REPORT

Clients	BRUHAT BENGALORE MAHANAGARA PALIKE
Project	Improvement of Drains and Asphalting to Road at Amarajoythi Layout Main Road Left and Right Side Cross Roads in Ward No.06(Thanisandra), Byatarayanapura Sub Division
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	Benaka developers and project pvt ltd

SPECIFIC GRAVITY AND WATER ABSORPTION

FINE AGGREGATE (IS-2386-PART-3)

Type of Material	Fine aggregate (River Sand/ M sand)	Proposed Use	concrete
Location/Source	At Site/Plant	Date of Sampling	05.05.19
Period of Soaking	24 hours	Date of Testing	05.05.19

Sl. No.	Test Property	TRIAL - 1	TRIAL - 2	TRIAL - 3	
A	Weight of sturated surface dry sample gm.	649	679	659	
B	Weight of oven - dry sample gm.	642	671	650	
C	Weight of Pycnometer Filled with water gm	1275	1275	1275	
D	Weight of Pycnometer + sample + water gm	1683	1072	1692	
E	Bulk specific gravity $\frac{B}{(C+A-D)}$	2.664	0.761	2.686	2.037
G	Absorption (%) $\frac{(A-B)*100}{B}$	1.090	1.192	1.385	1.222

Note:

1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples eceived in the laboratory /Site.
3. Any Query regarding the report must be reported reported within 15days from the date of testing.

ಸಹಾಯಕ ಅಭಿಯಂತರರು
ಬಿ.ಬಿ.ಎಂ.ಪಿ ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ., ಬೆಂಗಳೂರು-26

TEJUS CONSULTANTS

Authorised Signatory

Scanned by CamScanner

TEJUS
CONSULTANTS

TEST REPORT

nts	Bruhat Bangalore Mahanagara Palike
ect	Improvement of Drains and Asphalting to Road at Amarajoythi Layout Main Road Left and Right Side Cross Roads in Ward No.06(Thanisandra), Byatarayanapura Sub Division
sultants	Tejus Consultants, Bangalore
tractor	Benaka developers and project pvt ltd

SIEVE ANALYSIS

l Weight:	3000 gms		
e of erial	Fine aggregate (River Sand/ M sand)	Proposed Use	concrete
ple ition	At Site/Plant	Date of Sampling	05.05.19
		Date of Testing	05.05.19

Sieve Size	Weight Retained	Cum. Weight Retained	Cum. % Retained	Cum. % Passing	Spec. Limit (%) Passing (Zone-II)
) mm	0	0	0	100.00	100
mm	211	211	7.03	92.97	90 - 100
mm	308	519	17.30	82.70	75 - 100
mm	421	940	31.33	68.67	55 - 90
) mm	486	1426	47.53	52.47	35 -59
) mm	710	2136	71.20	28.80	8-30
) mm	632	2768	92.27	7.73	0 - 10
	232	3000			-

arks : ✓ Satisfactory / Not Satisfactory

e report shall not be reproduced, except in full, without the written approval of the laboratory.
e results indicated above are based on the tests carried out on the samples
ved in the laboratory/Site.
y Query regarding the report must be reported reported within 15days from the date of testing.

TEJAS CONSULTANTS

Authorised Signatory

ಸಹಾಯಕ ಅಭಿಯಂತರರು
ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ., ಬೆಂಗಳೂರು-24

Scanned by CamScanner

TEJUS
CONSULTANTS

Test Report on Cement

Project	Improvement of Drains and Asphalting to Road at Amarajoythi Layout Main Road Left and Right Side Cross Roads in Ward No.06(Thanisandra), Byatarayanapura Sub Division
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	Benaka Developers and Project Pvt. Ltd.
Sample ID	Cement
Date of Sample Tested	05.05.19
Sample Supplied By	Agency

Sl.No.	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 12269-1987
1	a) Initial Setting Time	IS-4031 (Part-5)	35 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part-5)	349 Minutes	Not More than 600 Minutes
2	Soundness	IS-4031 (Part-3) By the Le-Chatelier method	2mm	Not More than 10 mm
3	Standard Consistency	IS-4031 (Part-4)	28.00%	25 % to 35

Note:
1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory /Site.
3. Any Query regarding the report must be reported reported within 15days from the date of testing.

TEJUS CONSULTANTS

Authorised Signatory

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ., ಬೆಂಗಳೂರು-೨೫

TEJUS CONSULTANTS
No. 58, 3rd main, 6th Cross, 1st Stage KHB Colony, Basaveshwaranagar, Bangalore - 560079, O : +91 80 23287532, tejusconsultants@gmail.com

Scanned by CamScanner

TEJUS
CONSULTANTS

Test Report on Cement

Project	Improvement of Drains and Asphalting to Road at Amarajoythi Layout Main Road Left and Right Side Cross Roads in Ward No.06(Thanisandra), Byatarayanapura Sub Division
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	Benaka developers and project pvt ltd
Sample ID	Cement
Date of Sample Tested	05.05.19
Sample Supplied by	Agency

Sl.No.	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 12269-1987
1	a) Initial Setting Time	IS-4031 (Part-5)	38 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part-5)	349 Minutes	Not More than 600 Minutes
2	Soundness	IS-4031 (Part-3) By the Le-Chatelier method	4mm	Not More than 10 mm
3	Standard Consistency	IS-4031 (Part-4)	28.00%	25 % to 35

Note:
The report shall not be reproduced, except in full, without the written approval of the laboratory.
The results indicated above are based on the tests carried out on the samples received in the laboratory/Site.
Any Query regarding the report must be reported reported within 15days from the date of testing.

ಸಹಾಯಕ ಅಭಿಯಂತರರು
ಬಿ.ಬಿ.ಎಂ.ಪಿ ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರ
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ., ಬೆಂಗಳೂರು-26

TEJUS CONSULTANTS

Authorised Signatory

Scanned by CamScanner

TEJUS
CONSULTANTS

TEST REPORT

Clients	BRUHAT BENGALORE MAHANAGARA PALIKE
Project	Improvement of Drains and Asphalting to Road at Amarajoythi Layout Main Road Left and Right Side Cross Roads in Ward No.06(Thanisandra), Byatarayanapura Sub Division
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	Benaka developers and project pvt ltd

SPECIFIC GRAVITY AND WATER ABSORPTION

FINE AGGREGATE (IS-2386-PART-3)

Type of Material	Fine aggregate (River Sand/ M sand)	Proposed Use	concrete
Location/Source	At Site/Plant	Date of Sampling	05.05.19
Period of Soaking	24 hours	Date of Testing	05.05.19

Sl. No.	Test Property	TRIAL - 1	TRIAL - 2	TRIAL - 3	
A	Weight of sturated surface dry sample gm.	648	678	658	
B	Weight of oven - dry sample gm.	641	670	648	
C	Weight of Pycnometer Filled with water gm	1275	1275	1275	
D	Weight of Pycnometer + sample + water gm	1682	1701	1690	
E	Bulk specific gravity $\frac{B}{(C+A-D)}$	2.660	2.659	2.667	2.662
G	Absorption (%) $\frac{(A-B)*100}{B}$	1.092	1.194	1.543	1.276

TEJUS CONSULTANTS

ಸಹಾಯಕ ಅಭಿಯಂತರರು
ಬಿ.ಬಿ.ಎಂ.ಪಿ ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರ
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಬೆಂಗಳೂರು-24

TEJUS CONSULTANTS
No. 58, 3rd main

Scanned by CamScanner

TEJUS
CONSULTANTS

TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike
Project	Improvement of Drains and Asphalting to Road at Amarajoythi Layout Main Road Left and Right Side Cross Roads in Ward No.06(Thanisandra), Byatarayanapura Sub Division
Consultants	Tejus Consultants, Bangalore
Contractor	Benaka developers and project pvt ltd

SIEVE ANALYSIS

Total Weight:	3000 gms			
Type of Material	Fine aggregate (River Sand/ M sand)		Proposed Use	concrete
Sample Location	At Site/Plant		Date of Sampling	05.05.19
			Date of Testing	05.05.19

IS Sieve Size	Weight Retained	Cum. Weight Retained	Cum. % Retained	Cum. % Passing	Spec. Limit (%) Passing (Zone-II)
10.00 mm	0	0	0	100.00	100
4.75 mm	214	214	7.13	92.87	90 - 100
2.36 mm	309	523	17.43	82.57	75 - 100
1.18 mm	426	949	31.63	68.37	55 - 90
600 mm	489	1438	47.93	52.07	35 -59
300 mm	712	2150	71.67	28.33	8-30
150 mm	632	2782	92.73	7.27	0 - 10
Pan	218	3000			-

Remarks : Satisfactory / Not Satisfactory

ಸಹಾಯಕ ಅಭಿಯಂತರರು
ಬ.ಬ.ಮ.ಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಬೆಂಗಳೂರು-74

Consultant's Representative

TEJUS CONSULTANTS

TEJUS CONSULTANTS
No. 58, 3rd main, 6th Cross, 1st Stage KHB Colony, Basaveshwaranagar, Bangalore - 560079. O: +91 80 23287532, tejusconsultants@gmail.com

Scanned by CamScanner

TEJUS

TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike	
Project	Improvement of Drains and Asphalting to Road at Amarajoythi Layout Main Road Left and Right Side Cross Roads in Ward No.06(Thanisandra), Byatarayanapura Sub Division	
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore	
Contractor	Benaka developers and project pvt ltd	
Total Weight:	10000	gms

SIEVE ANALYSIS

Type of Material	20 mm down size	Proposed Use	PCC	
Sample Location	Plant/At site	Date of Sampling	05.05.19	
		Date of Testing	05.05.19	

IS Sieve Size	Weight Retained	Cum. Weight Retained	Cum. % Retained	Cum. % Passing	Spec. Limit (%) Passing
40.00 mm	0	0	0	100	100
20.00 mm	268	268	2.68	97.32	95 - 100
10.00 mm	4832	5100	51.00	49.00	25 - 55
4.75 mm	4228	9328	93.28	6.72	0 - 10
Pan	672	10000			

Remarks : Satisfactory / Not Satisfactory

Note:
1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory/Site.
3. Any Query regarding the report must be reported reported within 15days from the date of testing.

ಸಹಾಯಕ ಅಭಿಯಂತರರು
ಬಿ.ಬಿ.ಎಂ.ಪಿ ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ, ಬೆಂಗಳೂರು-26

TEJUS CONSULTANTS

Authorised Signatory

TEJUS CONSULTANTS
No.59

Scanned by CamScanner

TEJUS
CONSULTANTS

TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike
Project	Improvement of Drains and Asphalting to Road at Amarajoythi Layout Main Road Left and Right Side Cross Roads in Ward No.06(Thanisandra), Byatarayanapura Sub Division
Consultants	TEJUS CONSULTANTS
Contractor	Benaka developers and project pvt ltd
Total Weight(gm)	10000

SIEVE ANALYSIS

Type of Material	12.5 mm down size	Proposed Use	PCC	
Sample Location	At Site/Plant	Date of Sampling	05.05.19	
		Date of Testing	05.05.19	

IS Sieve Size (in mm)	Weight Retained	Cum. Weight Retained	Cum. % Retained	Cum. % Passing	Spec. Limit (%) Passing
20.0	0	0	0	100	100
12.5	546	546	5.46	94.54	90-100
10.0	4685	5231	52.31	47.69	40-85
4.75	4525	9756	97.56	2.44	0-10
Pan	244	10000			

Remarks :	✓ Satisfactory / Not Satisfactory

Note:
1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory/Site.
3. Any Query regarding the report must be reported reported within 15days from the date of testing.

ಸಹಾಯಕ ಅಭಿಯಂತರರು
ಬಿ.ಬಿ.ಎಂ.ಪಿ ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಬೆಂಗಳೂರು-24

TEJUS CONSULTANTS

Authorised Signatory

Scanned by CamScanner

TEJUS
CONSULTANTS

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

Project	Improvement of Drains and Asphalting to Road at Amarajoythi Layout Main Road Left and Right Side Cross Roads in Ward No.06(Thanisandra), Byatarayanapura Sub Division
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	Benaka developers and project pvt ltd
Grade of concrete:	M15
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	05.05.19	12.05.19	7 days	8.120	22500	209	9.29	9.41
2	05.05.19	12.05.19	7 days	8.130	22500	212	9.42	
3	05.05.19	12.05.19	7 days	8.140	22500	214	9.51	

Note:

1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples eceived in the laboratory/Site.
3. Any Query regarding the report must be reported reported within 15days from the date of testing.

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಬೆಂಗಳೂರು-24

TEJUS CONSULTANTS
Authorised Signatory

TEJUS CONSULTANTS
No. 58, 3rd main, 6th Cross, 1st Stage KHB Colony, Basaveshwaranagar, Bangalore - 560079. O : +91 80 23287532, tejusconsultants@gmail.com

Scanned by CamScanner

TEJUS
CONSULTANTS

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

Project	Improvement of Drains and Asphalting to Road at Amarajoythi Layout Main Road Left and Right Side Cross Roads in Ward No.06(Thanisandra), Byatarayanapura Sub Division
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	Benaka Developers and Project Pvt. Ltd.
Grade of concrete:	M20
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	05.05.19	12.05.19	7 days	8.122	22500	281	12.49	12.56
2	05.05.19	12.05.19	7 days	8.201	22500	283	12.58	
3	05.05.19	12.05.19	7 days	8.137	22500	284	12.62	

Note:
1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory/Site.
3. Any Query regarding the report must be reported reported within 15days from the date of testing.

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ., ಬೆಂಗಳೂರು-24

TEJUS CONSULTANTS
Authorised Signatory

TEJUS CONSULTANTS
No: 58, 3rd main, 6th Cross, 1st Stage KHB Colony, Basaveshwaranagar, Bangalore -560079. O : +91 80 23287532. tejusconsultants@gmail.com

Scanned by CamScanner

TEJUS

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

Project	Improvement of Drains and Asphalting to Road at Amarajoythi Layout Main Road Left and Right Side Cross Roads in Ward No.06(Thanisandra), Byatarayanapura Sub Division
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	Benaka Developers and Project Pvt. Ltd.
Grade of concrete:	M20
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	05.05.19	03.06.19	28 days	8.240	22500	451	20.04	20.15
2	05.05.19	03.06.19	28 days	8.320	22500	453	20.13	
3	05.05.19	03.06.19	28 days	8.146	22500	456	20.27	

Note:
1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory/Site.
3. Any Query regarding the report must be reported reported within 15days from the date of testing.

TEJUS CONSULTANTS

Authorised Signatory

Scanned by CamScanner

TEJUS
CONSULTANTS

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

oject	Improvement of Drains and Asphalting to Road at Amarajoythi Layout Main Road Left and Right Side Cross Roads in Ward No.06(Thanisandra), Byatarayanapura Sub Division
ent	Bruhat Bangalore Mahanagar Palike
nsultant	TEJUS CONSULTANTS
ntractor	Benaka developers and project pvt ltd
ade of crete:	M15
e of cube:	150x150x150 mm
ference ode:	IS:516-1959

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	05.05.19	03.06.19	28 days	8.122	22500	342	15.20	15.30
2	05.05.19	03.06.19	28 days	8.132	22500	343	15.24	
3	05.05.19	03.06.19	28 days	8.146	22500	348	15.47	

:
e report shall not be reproduced, except in full, without the written approval of the laboratory.
e results indicated above are based on the tests carried out on the samples
ved in the laboratory/Site.
y Query regarding the report must be reported reported within 15days from the date of testing.

ಸಹಾಯಕ ಕಾರ್ಯನಿರ್ವಾಹಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ., ಬೆಂಗಳೂರು-24

TEJUS CONSULTANTS
Authorised Signatory

Scanned by CamScanner

AGGREGATE IMPACT VALUE
(IS: 2386 Part - 4)

TEJUS CONSULTANTS

Project	Improvement of Drains and Asphalting to Road at Amarajoythi Layout Main Road Left and Right Side Cross Roads in Ward No.06(Thanisandra), Byatarayanapura Sub Division		
Client	BRUHAT BANGALORE MAHANAGARA PALIKE		
Consultant	M/s Tejus Consultants		
Contractor	Benaka Developers and Project Pvt. Ltd.		
Proposed Use	WMM	Date of Sampling	03.06.19
Sample Location	At plant	Date of Testing	03.06.19

Sl. No.	Description		Test No. 1	Test No. 2	Test No. 3	Spec Limit (%)
1	Wt. of stone pieces (dry) passing IS Sieve 12.5mm but retained in IS sieve 10mm (gm)	(Wa)	354.00	350.00	351.00	
2	Wt. of the fraction retained in IS sieve 2.36mm after the impact test (gm)	(Wb)	275.00	278.00	273.00	
3	Wt. of the fraction passed in IS sieve 2.36mm after the impact test (gm)	(Wc)	79.00	72.00	78.00	
4	Aggregate Impact Value (%)	(Wc/Wa)* 100	22.32	20.57	22.22	
5	Average Aggregate impact value	(%)	21.70			Max - 30 %

Remarks : Satisfactory / Not Satisfactory

Note:
1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory/Site.
3. Any Query regarding the report must be reported reported within 15days from the date of testing.

ಸಹಾಯಕ ಕಾರ್ಯನಿರ್ವಾಹಕ ಅಧಿಕಾರಿ
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ., ಬೆಂಗಳೂರು-೨೬

TEJUS CONSULTANTS

Authorised Signatory

Scanned by CamScanner

TEJUS

FLAKINESS AND ELONGATION INDICES (IS 2386, PART 1)

Project	Improvement of Drains and Asphalting to Road at Amarajoythi Layout Main Road Left and Right Side Cross Roads in Ward No.06(Thanisandra), Byatarayanapura Sub Division
Client	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	M/s Tejus Consultants
Contractor	Benaka Developers and Project Pvt. Ltd.

Type of Material	WMM	Proposed Use	WMM
Sample Location	At plant	Date of Sampling	03.06.19
		Date of Testing	03.06.19

Size of aggregate		Flakiness Index		Elongation Index	
Passing through IS sieve, mm	Retained on IS sieve, mm	Total wt. of aggregate retained on sieves (A) gms.	Wt. of aggregate passing from Flakiness gauge (B) gms	Wt. of aggregate retained on Flakiness gauge (C) gms	Wt. of aggregate retained on Elongation gauge after retained on Flakiness gauge(D)gms
63.0	50.0	0	0	0	0
50.0	40.0	0	0	0	0
40.0	31.5	0	0	0	0
31.5	25.0	0	0	0	0
25.0	20.0	0	0	0	0
20.0	16.0	854	76	778	52
16.0	12.5	1208	114	1094	122
12.5	10.0	452	74	378	63
10.0	6.3	506	64	442	36
Total		3020	328	2692	273

Note: Minimum 200 Pcs should be taken on each fraction of test

Flakiness Index(%):	10.86
Elongation Index(%):	10.14
Combined FI+EL (%)	21.00

Note:
1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory/Site.
3. Any Query regarding the report must be reported reported within 15days from the date of testing.

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ., ಬೆಂಗಳೂರು-24

TEJUS CONSULTANTS
Authorised Signatory

Scanned by CamScanner

TEJUS
CONSULTANTS

GRADATION FOR WMM
(As per MORT&H 400-11)

Name of Work	:	Improvement of Drains and Asphalting to Road at Amarajoythi Layout Main Road Left and Right Side Cross Roads in Ward No.06(Thanisandra), Byatarayanapura Sub Division
Client	:	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	:	M/s Tejus Consultants
Contractor	:	Benaka Developers and Project Pvt. Ltd.
Date of Testing	:	03.06.19
Type of Mix	:	WMM
Sample I/D	:	WMM 1

Sample Location:	At plant	Date of Sampling:	03.06.19
Type of material & Purpose:	WMM	Date of testing:	03.06.19
		Oven Dry Wt.(gms):	10000.0

IS Sieve size in mm	Weight retained (gm)	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
53	0	0	0.00	100.00	100.00
45	625	625	6.25	93.75	95-100
22.4	2561	3186	31.86	68.14	60-80
11.2	1782	4968	49.68	50.32	40-60
4.75	1456	6424	64.24	35.76	25-40
2.36	1352	7776	77.76	22.24	15-30
0.6	865	8641	86.41	13.59	8.0-22.0
0.075	843	9484	94.84	5.16	0-8
Pan	516				
Total	10000				

Note:
1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory/Site.
3. Any Query regarding the report must be reported reported within 15days from the date of testing.

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ., ಬೆಂಗಳೂರು-26

TEJUS CONSULTANTS
Authorised Signatory

Scanned by CamScanner

Project	Improvement of Drains and Asphalting to Road at Amarajoythi Layout Main Road Left and Right Side Cross Roads in Ward No.06(Thanisandra), Byatarayanapura Sub Division
Client	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	M/s Tejus Consultants
Contractor	Benaka Developers and Project Pvt. Ltd.

Field Dry Density test by Sand Replacement Method (As per IS 2720 (Part 28)

Date of Testing	04.06.19
Layer no. or level	WMM I layer
Depth of hole	250mm

Field density:	1	2	3
Wt. of wet material from hole (Ww) gms.	6165	6119	6224
Wt. of sand+cylinder before pouring (w1) gms.	14000	14000	14000
Wt. of sand+cylinder after pouring (w2) gms.	9739	9732	9716
Wt. of sand in cone (w3) gms.	835	846	831
Wt. of sand in hole (w4)=(w1-w2-w3) gms.	3426	3422	3453
Bulk density of sand (γs)gm/cc	1.31	1.32	1.31
Bulk density of material(i.e. wt. of the wet material) (γb)=(Ww/w4*(γs))gm/cc	2.36	2.36	2.36
Moisture meter reading(moisture content)	12.45	12.56	12.57
Result			
FDD(Wt.of the dry material)=(100γb/100+mc)gm/cc	2.10	2.10	2.10
MDD	2.13	2.13	2.13
OMC	12.60%	12.60%	12.60%
% of Compaction Obtained	98.42	98.45	98.48
Compaction Required	98%	98%	98%

Note:
1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory/Site.
3. Any Query regarding the report must be reported reported within 15days from the date of testing.

Authorised Signatory

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ., ಬೆಂಗಳೂರು-೫೯

TEJUS CONSULTANTS
No. 58, 3rd main, 6th Cross, 1st Stage KHB Colony, Basaveshwaranagar, Bangalore - 560079. ☎ +91 80 23287532 tejusconsultants@gmail.com

Scanned by CamScanner

AGGREGATE IMPACT VALUE
(IS: 2386 Part - 4)

TEJUS

roject	Improvement of Drains and Asphalting to Road at Amarajoythi Layout Main Road Left and Right Side Cross Roads in Ward No.06(Thanisandra), Byatarayanapura Sub Division		
lient	BRUHAT BANGALORE MAHANAGARA PALIKE		
onsultant	M/s Tejus Consultants		
ontractor	Benaka Developers and Project Pvt. Ltd.		
roposed se	BC	Date of Sampling	08.06.19
ample ocation	At plant	Date of Testing	08.06.19

Sl. No.	Description		Test No. 1	Test No. 2	Test No. 3	Spec Limit (%)
1	Wt. of stone pieces (dry) passing IS Sieve 12.5mm but retained in IS sieve 10mm (gm)	(Wa)	397.00	383.00	385.00	
2	Wt. of the fraction retained in IS sieve 2.36mm after the impact test (gm)	(Wb)	304.00	294.00	295.00	
3	Wt. of the fraction passed in IS sieve 2.36mm after the impact test (gm)	(Wc)	93.00	89.00	90.00	
4	Aggregate Impact Value (%)	(Wc/Wa)*100	23.43	23.24	23.38	
5	Average Aggregate impact value	(%)	23.35			Max - 30 %

Remarks : ✓ Satisfactory / Not Satisfactory

Note:
1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory/Site.
3. Any Query regarding the report must be reported reported within 15days from the date of testing.

ಸಹಾಯಕ ಕಾರ್ಯನಿರ್ವಾಹಕ ಅಭಿಯಂತರ
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ., ಬೆಂಗಳೂರು-೨೫

Authorised Signatory

Scanned by CamScanner

TEJUS CONSULTANTS

FLAKINESS AND ELONGATION INDICES (IS 2386, PART 1)

Project :	Improvement of Drains and Asphalting to Road at Amarajoythi Layout Main Road Left and Right Side Cross Roads in Ward No.06(Thanisandra), Byatarayanapura Sub Division
Client :	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant :	M/s Tejus Consultants
Contractor:	Benaka Developers and Project Pvt. Ltd.

Type of Material	BC	Proposed Use	BC
Sample Location	At plant	Date of Sampling	08.06.19
		Date of Testing	08.06.19

Size of aggregate		Flakiness Index		Elongation Index	
Passing through IS sieve, mm	Retained on IS sieve, mm	Total wt. of aggregate retained on sieves (A) gms.	Wt. of aggregate passing from Flakiness gauge (B) gms	Wt. of aggregate retained on Flakiness gauge (C) gms	Wt. of aggregate retained on Elongation gauge after retained on Flakiness gauge(D)gms
63.0	50.0	0	0	0	0
50.0	40.0	0	0	0	0
40.0	31.5	0	0	0	0
31.5	25.0	0	0	0	0
25.0	20.0	0	0	0	0
20.0	16.0	629	75	555	62
16.0	12.5	1209	111	1098	82
12.5	10.0	502	70	432	60
10.0	6.3	505	58	447	45
Total		2845	314	2532	249

Note: Minimum 200 Pcs should be taken on each fraction of test

Flakiness Index(%):	11.04
Elongation Index(%):	9.83
Combined FI+EL (%)	20.87

Note:
1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory/Site.
3. Any Query regarding the report must be reported reported within 15days from the date of testing.

TEJUS CONSULTANTS
Authorised Signatory

ಸಹಾಯಕ ಅಧಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ

ಸಹಾಯಕ ಎಂಜಿನಿಯರ್ ಅಧಿಕಾರಿಗಳು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ., ಬೆಂಗಳೂರು-೨೫

TEJUS CONSULTANTS
No 58, 3rd main, 5th

Scanned by CamScanner

GRADATION FOR BC
(As per MORT&H 500-18,Grading-2)

Name of Work	:	Improvement of Drains and Asphalting to Road at Amarajyothi Layout Main Road Left and Right Side Cross Roads in Ward No.86(Thanisandra). Byatarayanapura Sub Division
Client	:	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	:	M/s Tejus Consultants
Contractor	:	Benaka Developers and Project Pvt. Ltd.
Date of Testing	:	08.06.19
Type of Mix	:	BC
Sample I/D	:	BC3

Sample Location:	At plant	Date of Sampling:	08.06.19
Type of material & Purpose:	BC	Date of testing:	08.06.19
		Oven Dry Wt.(gms):	1200.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
19.00	0	0	0.00	100.00	100.00
13.20	132	132.0	11.00	89.00	79 - 100
9.50	108	240.0	20.00	80.00	71 - 95
4.75	232	472.0	39.33	60.67	53 - 71
2.360	126	598.0	49.83	50.17	42 - 58
1.180	126	724.0	60.33	39.67	34 - 48
0.600	110	834.0	69.50	30.50	26 - 38
0.300	110	944.0	78.67	21.33	18 - 28
0.150	82	1026.0	85.50	14.50	12 - 20
0.075	96	1122.0	93.50	6.50	4 - 10
Pan	78.0				
Total	1200.0				

Note:
1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory/Site.
3. Any Query regarding the report must be reported reported within 15days from the date of testing.

TEJUS CONSULTANTS
Authorised Signatory

Scanned by CamScanner

BITUMEN CONTENT AND GRADATION DETERMINATION OF BITUMINOUS CONCRETE MIX

ame of Work :	Improvement of Drains and Asphalting to Road at Amarajoythi Layout Main Road Left and Right Side Cross Roads in Ward No.06(Thanisandra), Byatarayanapura Sub Division
ient :	BRUHAT BANGALORE MAHANAGARA PALIKE
onsultant :	M/s Tejus Consultants
ontractor :	Benaka Developers and Project Pvt. Ltd.
ate of Testing :	09.06.19
ype of Mix :	BC
ample I/D :	BC1

TEJUS

DETERMINATION OF BITUMEN CONTENT

Description	Trail 1	Trail 2
Weight of Mixture before extraction, g	953	921
Weight of Mixture after extraction, g	900	872
Weight of Bitumen	53	49
Weight of filter paper before extraction, g	2.00	2.00
Weight of filter paper after extraction, g	4.10	4.00
Weight of fines, g	1.40	1.70
Weight of Bitumen & fines	54.40	50.70
Bitumen content in %	5.71	5.50
Average Bitumen content in %	5.61	
0. Minimum Bitumen content in %	5.40	

GRADATION FOR BC AFTER EXTRACTION

(As per MORT&H 500-18,Grading-2)

ample Location:	At site	Date of Sampling:	09.06.19
ype of material & urpose:	BC	Date of testing:	09.06.19
		Oven Dry Wt.(gms):	900.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
19.00	0	0	0.00	100.00	100.00
13.20	92	92.0	10.22	89.78	79 - 100
9.50	118	210.0	23.33	76.67	71 - 95
4.75	134	344.0	38.22	61.78	53 - 71
2.360	119	463.0	51.44	48.56	42 - 58
1.180	106	569.0	63.22	36.78	34 - 48
0.600	71	640.0	71.11	28.89	26 - 38
0.300	74	714.0	79.33	20.67	18 - 28
0.150	55	769.0	85.44	14.56	12 - 20
0.075	70	839.0	93.22	6.78	4 - 10
Pan	61.0				
Total	900.0				

ote:

. The report shall not be reproduced, except in full, without the written approval of the laboratory.
. The results indicated above are based on the tests carried out on the samples eceived in the laboratory/Site.
. Any Query regarding the report must be reported reported within 15days from the date of testing.

TEJUS CONSULTANTS

Authorised Signatory

TEJUS CONSULTANTS
No. 58, 3rd main, 6th Cross, 1st Stage KHB Colony, Basaveshwar[illegible], Bangalore - 560079. ☎ : +91 80 23287532, tejusconsultants@gmail.com

Scanned by CamScanner

DETERMINATION OF RATE OF SPREAD TACK COAT

TEJUS

Name of Work :	Improvement of Drains and Asphalting to Road at Amarajoythi Layout Main Road Left and Right Side Cross Roads in Ward No.06(Thanisandra), Byatarayanapura Sub Division
Client :	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant :	M/s Tejus Consultants
Contractor :	Benaka Developers and Project Pvt. Ltd.
Date of Testing :	09.06.19
Type of Mix :	Tack coat
Sample I/D :	1

Determination	Unit	Test No		
		1	2	3
Size of Plate (mxm)	Mt	0.30 x .30	0.30 x .30	0.30 x .30
Area of Plate (a)	Sq.mtr	0.09	0.09	0.09
Initial Wt of empty Plate (b)	Kg	0.826	0.792	0.800
Final weight of plate after application of tack Coat (c)	Kg	0.849	0.815	0.823
Weight of tack Coat (d=c-b)	Kg	0.023	0.023	0.023
Rate of spread of tack coat	Kg/sq.m	0.250	0.256	0.251
Average	Kg/sq.m	0.252		
Specified Limit	Kg/sq.m	**0.250 Kg/sq.m**		

Note:

1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory/Site.
3. Any Query regarding the report must be reported reported within 15days from the date of testing.

TEJUS CONSULTANTS

Authorised Signatory

Scanned by CamScanner